Device Design and Characterization Program

As microelectronics pushes into the nanoelectronics regime traditional CMOS reaches fundamental limits; new device structures such as Multi-Gate FETs (MUGFETs), fully depleted and partially depleted silicon-on-insulator, various alloys such as silicon-germanium and silicon-germanium-carbon, strained layers and other exotica such as carbon nanotube, spintronic, and phase change and molectronic device structures need to be characterized. Another addition to the portfolio is the emerging field of organic materials electronics. With all of these changes taking place, NIST has established the Center for Nanoscale Science and Technology (CNST), a multidisciplinary center composed of a research program and the Nanofab, a fee base, shared use user facility with advanced processing and metrology equipment suitable for advancing into the nanotechnology era.